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<p>(21) International Application Number: PCT/AU98/00155</p> <p>(22) International Filing Date: 12 March 1998 (12.03.98)</p> <p>(30) Priority Data: PO 5574 12 March 1997 (12.03.97) AU</p> <p>(71)(72) Applicant and Inventor: HARTLEY, Kevin [AU/AU]; 2A Cottesloe Street, West Beach, S.A. 5024 (AU).</p> <p>(74) Agent: COLLISON & CO; 117 King William Street, Adelaide, S.A. 5000 (AU).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report.</p>	
<p>(54) Title: UNDERPANTS WITH A SUPPORT SLING</p> <p>(57) Abstract</p> <p>A pair of underpants for a male that includes on an inner side of a front panel (9) a sling (17) supported by straps (14 and 15) where the sling (17) can be positioned by a wearer so that when seated the sling (17) being positioned behind and below the testes of the wearer being in a sling capture area (25) will interpose to lift these. The sling (17) has a lowermost open area between the panel (9), side flaps (18 and 19) which secure the sling to the panel and the sling (17) providing a passageway (22) therethrough for improved ventilation and access therethrough of male genital parts.</p>			

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UNDERPANTS WITH A SUPPORT SLING

This invention relates to underpants for males.

The problem to which this invention is directed relates to difficulties currently experienced by males when wearing underpants of common design and the 5 purpose of the invention is to reduce these difficulties or at the least provide the public with a useful alternative.

One of these difficulties relates to the problem experienced by adult males where, ordinarily, when seated the testes will be located between the legs so that they might lie very close to the legs and are therefore highly susceptible to 10 being kept very warm by such surrounding body parts as well as having an area beneath the legs closed by whatever seat the male is sitting on.

The problem then is that male sperm can be very susceptible to higher temperatures and further, such a location and high temperature leads to an 15 excess of perspiration and therefore development of infection or at the least bad odours.

The problem then is to provide an article of clothing which will be functional while a male is standing but provide some assistance to overcome the problem described when the subject male is seated.

In one form of this invention, there is provided a pair of underpants that 20 includes a panel or panels adopted to extend across the front genital area of the male wearer with an uppermost waist band and, supported on an inner side of the panel or panels an arrangement of material that forms a sling that can be positioned by the wearer so that when seated the sling being positioned behind and below the testes will interpose to lift these.

25 In preference, the sling has a lowermost open area allowing for passage therethrough of the outer end of the penis in the event this is larger than might be normally expected.

In preference, the arrangement is adapted such that the sling will lift the scrotum when a wearer is in a seated position.

In preference, the sling is supported by a main body of clothing providing a panel or panels of cloth extending across a front area of the underpants supported by an elastic waist.

In a further form then the invention can be said to reside in a pair of
5 underpants which includes a waist band, at least a front panel, and two straps positioned behind the front panel and spaced apart from each other so as to be one to each side of a penis location and supported at an upper end by the waist band and at a lower end are each shaped so as to form a sling which extends between the two straps and there being two flaps one attached one to
10 each strap and being joined to the front panel to extend directly from a lower outer side of respectively each of the straps and such as to leave an open area or passageway between inner sides respectively of each of the flaps and between a front side of the sling and a rear side of the front panel.

In preference the sling then has a lower most centrally located free edge
15 which is supported and positioned by the straps and the flaps which edge defines one part of the passageway into a sling capture area.

In preference, there is a pair of underpants of generally boxer style which has supported to extend from an inner side of these, a support sling located and positioned so that a lower part of the sling can be positioned to extend
20 beneath the scrotum of a wearer to allow for freedom of these when the wearer is standing.

In preference, the means on the inside of the article of underwear are such as to allow for freedom of location of male genitals such that they will accommodate a range of different sizes of such genitals and also allow for
25 erection of a penis without causing undue discomfort to the wearer.

Further in preference, the sling is formed by straps which are secured to the waist only at their upper ends; and, at their lower ends, extend with material such as to form a sling and having at a lower end a flap which extends to the front and is secured to a front panel so as to provide lift for the testes when the
30 wearer is seated.

The invention will be better understood when described with the assistance of drawings where:

FIG 1 is a front view of a pair of underpants according to this invention,

FIG 2 is a front elevation of the same underpants as shown in FIG 1 except that they are turned inside out so as to show the supporting sling in accord with this embodiment,

5 FIG 3 is a side elevation of a cross section through the underpants as shown in FIG 1 with however, in dotted outline, the expected position of the male wearer together with the appropriate genital position,

FIG 4 is a part cutaway perspective view of the underpants showing a relative position of the support sling,

10 FIG 5 is a view similar to that in FIG 3 again of the embodiment but in this case showing the way in which the support sling will support the scrotum or testes when the male is seated,

FIG 6 is a separate perspective view of the sling part of the embodiment,

15 FIG 7 is a perspective view with part cutaway illustrating the way in which the underpants according to this embodiment are positioned when the wearer is ordinarily standing, and

FIG 8 is a side view of the arrangement as shown in FIG 7.

Referring to the drawings in detail, FIG 1 illustrates the outside view in which there is a waist band 1 which is intended to be worn normally lower than that

20 provided by other underpants so that the thickness of the band will be below a trouser belt position.

The style of the underpants providing an outer garment are conventional boxer shorts which is a style known and found to be very comfortable for normal usage.

25 In accord with this embodiment there are full legs 2 and 3, and a joining panel 4 which is joined to leg panels 5 and 6 by seams 7 and 8.

Seams 7 and 8 support a front panel 9 which is openable along the join at 10 and there is a back panel 11 behind this the joining edge of which is shown for instance in FIG 2 at 12 so that for normal purposes of relief, the penis can be manoeuvred between the several panels.

- 5 Supported at an upper end at 13 and 14 there are two straps 15 and 16 which extend from the upper end to a lower part being spaced apart so that they are respectively one to each side of a centre location and each hangs separate from any other attachment to an upper end of the front panel 9 or seams 7 or 8 or any other parts of the outer underpants part.
- 10 The straps are each shaped at their lower end or bottom so as to form a sling 17 which extends between the respective straps. Further, there are flaps at 18 and 19 which are joined to the front panel 9 at the respective seams 7 and 8 from a lower outer side of each of the straps 15 and 16. This then leaves an open area or passageway 25 between inner sides respectively of each of the flaps 18 and 19 and between a front side of the sling and a rear side of the front panel 9. This passageway 22 firstly allows room for a larger than might be normally expected penis but it also allows for passage of air and ventilation generally from below the sling 17 into a sling capture area 25. This improves air circulation and this implicitly improves the environment in this area and will assist in keeping the testes cooler than might otherwise be the case. The sling 17 has a lower most edge which is supported and positioned by the straps 15 and 16 and the flaps 18 and 19 which edge is a free edge so as to in part define the passageway between the panel 9.
- 15
- 20
- 25 The sling 20 includes a part of softer material at 21 for comfort and otherwise is comprised of a comfortable and soft cloth to be located by a wearer below and behind the testes.
- 30 The gap or passageway 22 is between the lower edge of this part 21 which is there for the purpose of allowing a penis in the case of a larger than ordinary penis to be accommodated, and likewise, the respective straps 15 and 16 are not joined to the front panel or the seams 9, or 7 and 8 so as to allow for passage therethrough of a penis in the case of an erection.

The advantage of the arrangement described is that for normal use the underpants now act as ordinary boxer shorts for purposes where the male is standing so that the genitals can hang in their more or less naturally hanging position as shown for instance in 3 where the scrotum 23 and penis 24 are 5 shown slightly covered but otherwise naturally positioned.

In the event that the penis 24 is longer than that shown, it will be seen that this can easily push through the gap or passageway 22.

When the male sits however as shown in FIG 5, it will now be seen that because the panel 9 and the seams 7 and 8 are lifted as a part of the lifting of 10 the legs of the wearer, this then causes the shape of the sling 17 as shown to convert to a supportive nesting shape providing a sling capture area and further, by being both behind and beneath the scrotum 23 and being lifted by flaps 18 and 19 will both provide an interface between legs and the scrotum and to some extent lift the scrotum or testes scrotum above a deeper position 15 to potentially keep these cooler. This is significantly assisted by the fact of the passageway 22.

From this it will now be seen that by providing a relatively simple addition to the inside of a pair of underpants such as a boxer style garment, there can be provided significant improvement both in terms of comfort for adult males, and 20 further, significant physiological and comfort improvements as well as health improvements to sperm in certain circumstances.

It is considered that this arrangement provides the advantages of the wearing of a briefs form of underpants with the advantages otherwise when not seated of wearing boxer style shorts as underpants.

25 By essentially providing a sling which when the legs are lifted will cause the back of the sling to lift, catching the genitals and lifting these, provides this effective result.

There can be other means by which the same effect can be achieved.

The extent to which there need to be independent straps supporting the loop or that these need to be vertically orientated in normal use or whether these can be comprised of broader cloth secured more extensively at and close to the top are improvements that can be applied in some cases.

CLAIMS

1. A pair of underpants that includes a panel or panels adopted to extend across the front genital area of the male wearer with an uppermost waist band and, supported on an inner side of the panel or panels, an arrangement of material that forms a sling that can be positioned by the wearer so that when seated the sling being positioned behind and below the testes will interpose to lift these.
5
2. A pair of underpants which includes a waist band, at least a front panel, and two straps positioned behind the front panel and spaced apart from each other so as to be one to each side of a penis location and supported at an upper end by the waist band and at a lower end are each shaped so as to form a sling which extends between the two straps and there being two flaps one attached one to each strap and being joined to the front panel to extend directly from a lower outer side of respectively each of the straps and such as to leave an open area or passageway between inner sides respectively of each of the flaps and between a front side of the sling and a rear side of the front panel.
10
3. A pair of underpants as in either one of the preceding claims further characterised in that the sling has a lower most centrally located free edge which is supported and positioned by the straps and the flaps which edge defines one part of the passageway into a sling capture area.
15
4. A pair of underpants as in the immediately preceding claim further characterised in that the arrangement is adapted such that the sling will lift the scrotum when a wearer is in a seated position.
20
- 25 5. A pair of underpants as in any one of the preceding claims further characterised in that the sling is supported by a main body of clothing providing a panel or panels of cloth extending across a front area of the underpants supported by an elastic waist band.
- 30 6. A pair of underpants of generally boxer style which has attached, to extend from an inner side of these, a support sling located and positioned so that a lower part of the sling can be positioned to extend beneath the scrotum

of a wearer to allow for freedom of these when the wearer is standing.

7. A pair of underpants as in any one of the preceding claims further characterised in that the front panel is openable so that for relief, when being worn, the penis can be located to extend therethrough.
- 5 8. A pair of underpants as in any one of the preceding claims further characterised in that supported at an upper end there are the two straps which hang separate from any attachment at an upper end either to the front panel or to seams of the underpants.
- 10 9. A pair of underpants as in any one of the preceding claims further characterised in that the sling is comprised of softer material for assistance in comfort.
10. A pair of underpants as in any one of the preceding claims further characterised in that the passageway is of a size and positioned to allow a larger than average penis in a flaccid state to extend therethrough.
- 15 11. A pair of underpants as in any one of the preceding claims further characterised in that the respective straps define a gap between the strap and the front panel so as to allow for passage therethrough of a penis in the case of an erection of the penis.
- 20 12. A pair of underpants as in any one of the preceding claims further characterised in that there is a sleeve which when the legs are lifted will cause the back of the sleeve to lift, catching the genitals and lifting these.
13. A pair of underpants substantially as described in the specification with reference to and as illustrated by the accompanying illustrations.

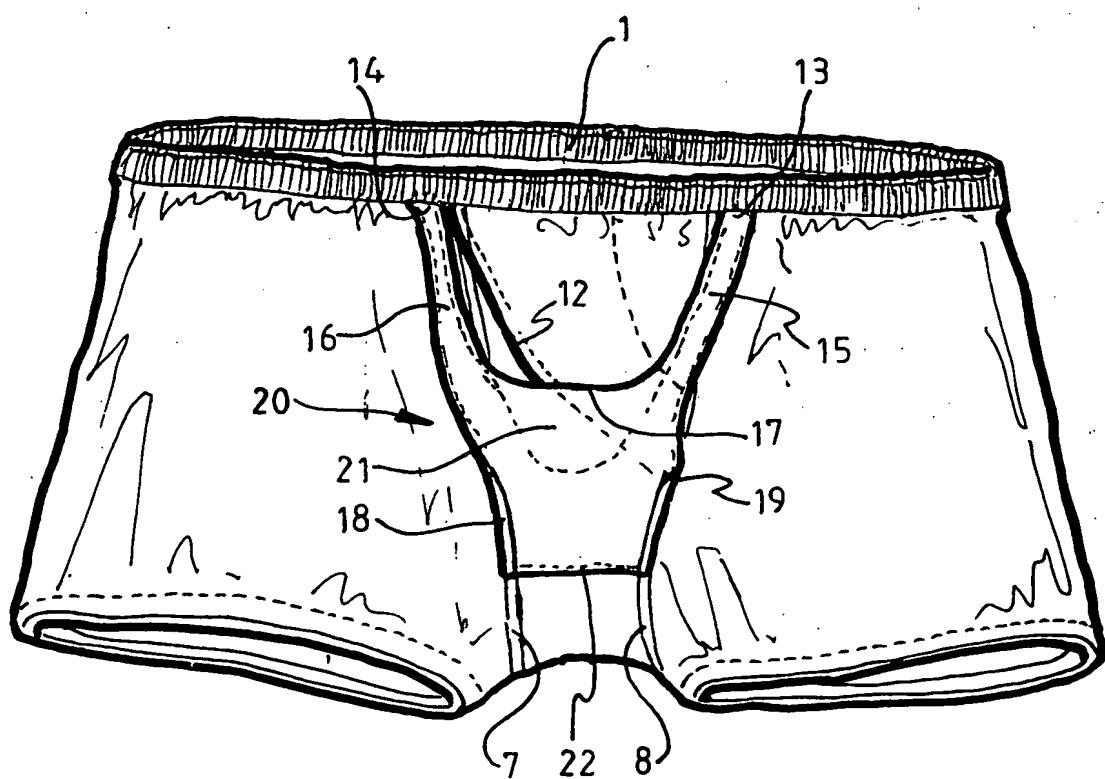
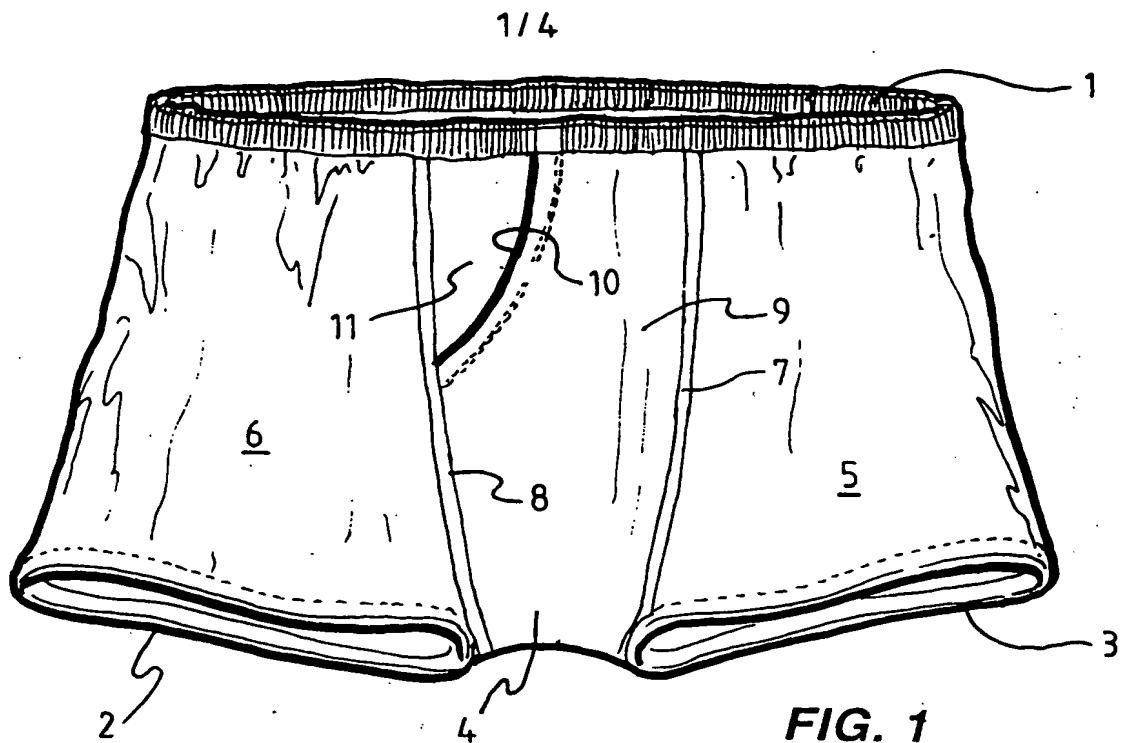
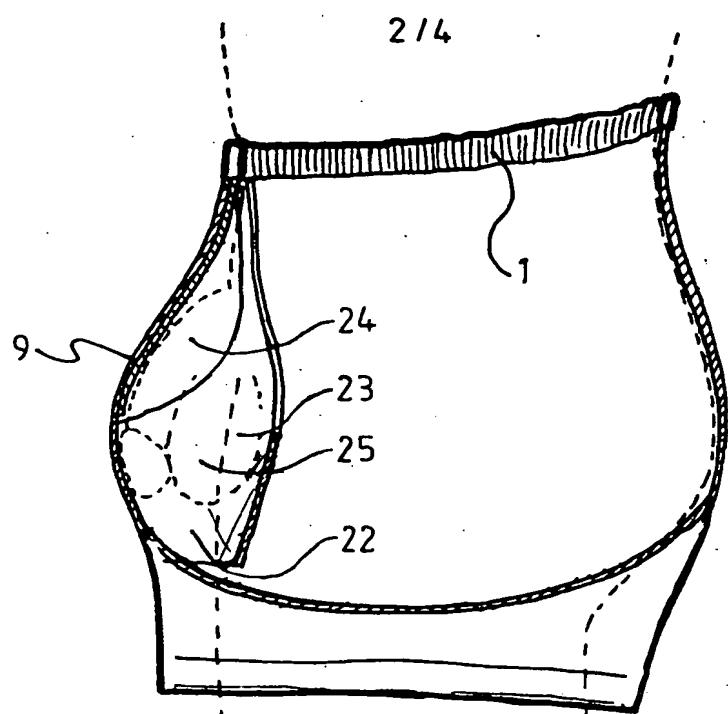
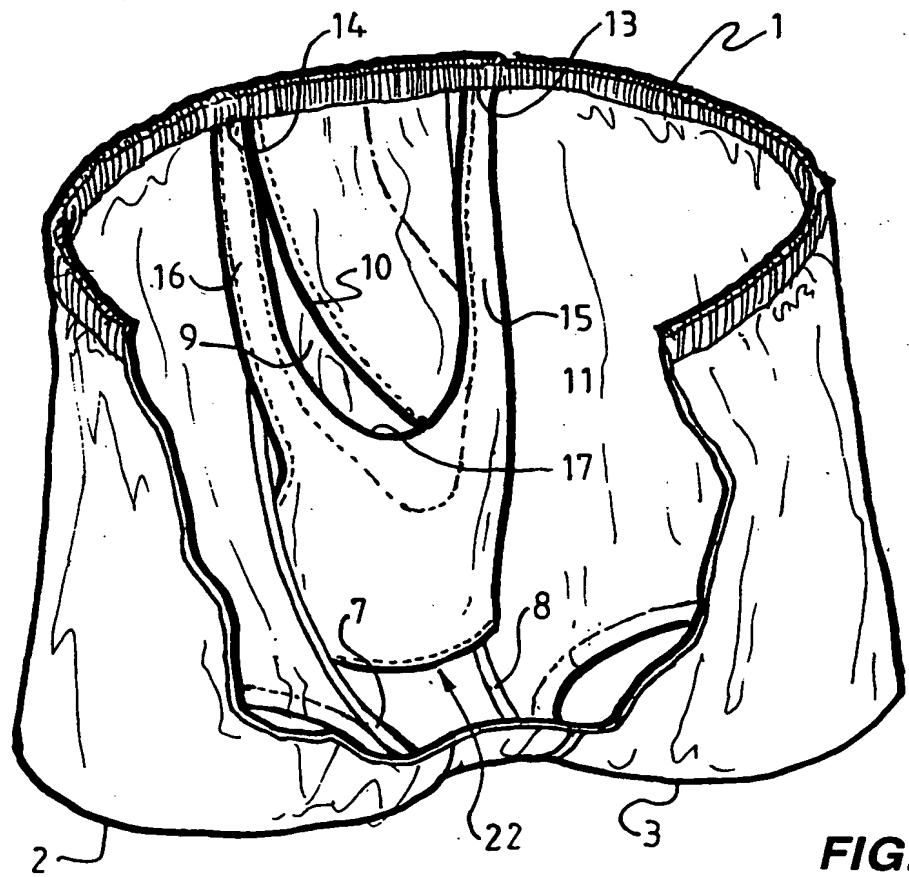
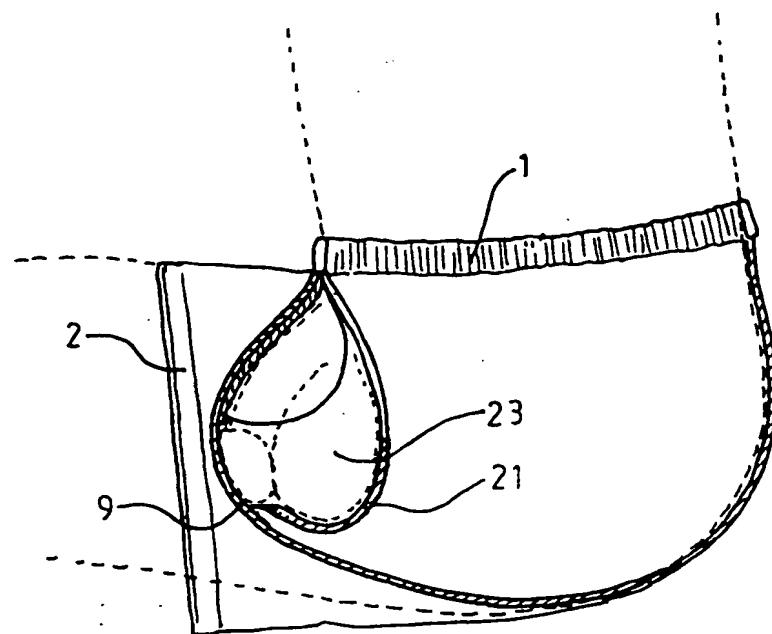
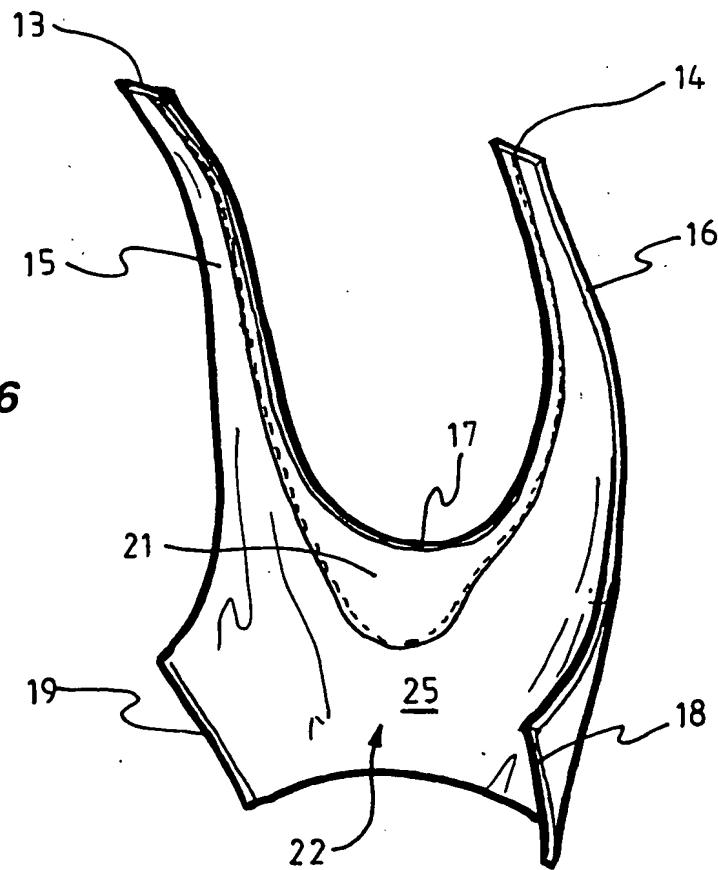


FIG. 2

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**FIG. 3****FIG. 4**

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**FIG. 5****FIG. 6**

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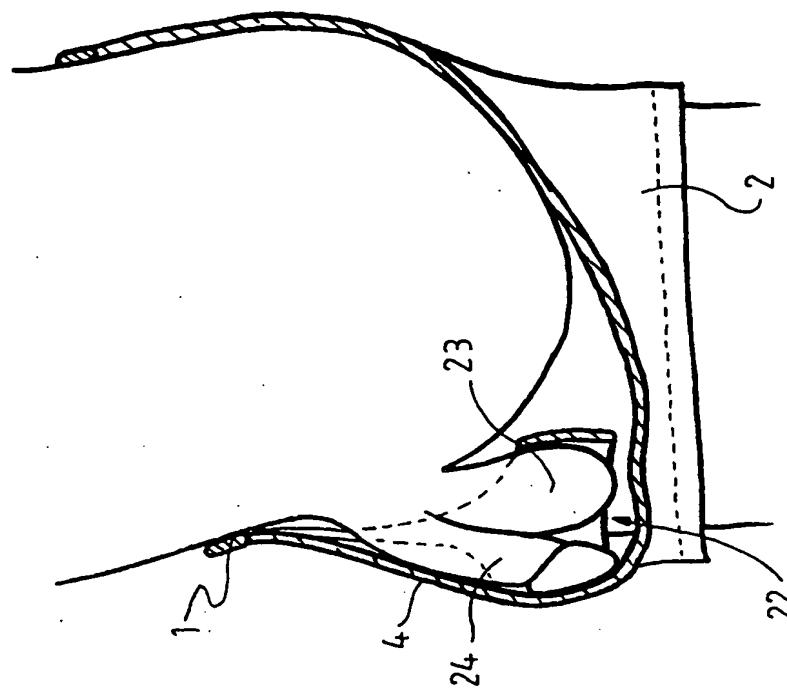


FIG. 8

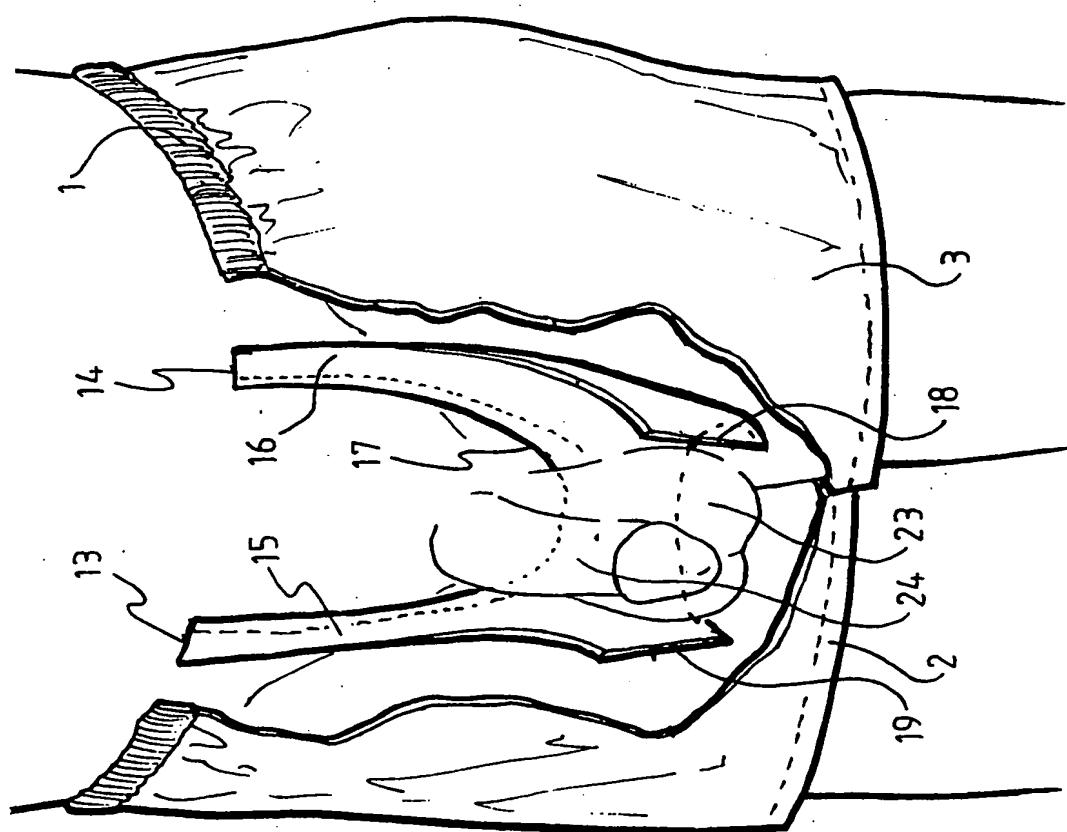


FIG. 7

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/AU 98/00155

A. CLASSIFICATION OF SUBJECT MATTER

Int Cl⁶: A41B 9/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: A41B 9/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPAT, JPAT, USPM: A41B-009/02/IC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3295520 A (KELLER) 3 January 1967 Column 1, lines 23-70; column 3, lines 21-60; column 4, lines 25-37; column 5, lines 25-45; column 5, line 61 - column 6, line 12; column 6, lines 26-42; figures 4, 8	1, 5-7, 9, 12
X	US 5379462 A (MORGAN et al.) 10 January 1995 Column 1, lines 19-24; column 2, line 38 - column 3, line 35; figures 1-5	1, 5-7, 9, 12

Further documents are listed in the continuation of Box C

See patent family annex

* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier document but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search
8 April 1998

Date of mailing of the international search report

22 APR 1998

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INTERNATIONAL SEARCH REPORT

International Application No.

PCT/AU 98/00155

C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4195630 A (CONNERY) 1 April 1980 Column 3, line 53 - column 4, line 24; column 4, line 53 - column 5, line 9; figures 2-3	1, 5, 7
X	FR 2624701 A (DORIATH) 23 June 1989 Page 1, line 5 - page 2, line 42; page 2, line 56 - page 3, line 101; figures 1-5	1, 5, 7
A	FR 2567001 A (DELACHAUX) 10 January 1986 Page 1, lines 1-37; page 2, lines 22-28; figures 2-4	
P, X	US 5718003 A (GWINN) 17 February 1998 Column 2, line 21 - column 3, line 55; figures 1-8; claims 1-9	1, 4-7, 9

INTERNATIONAL SEARCH REPORT

International Application No.
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Box 1 Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 13 because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Claim 13 does not comply with PCT Rule 6.2 (a).

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.